

Chymists observe, that Vegetables (as Lavender, Rue, Marjoram, &c.) distilled *per se*, before fermentation yield Oyls without any burning Spirits, but after fermentation yield ardent Spirits without Oyls: Which shews, that their Oyl is by fermentation converted into Spirit. They find also, that if Oyls be poured in small quantity upon fermentating Vegetables, they distil over after fermentation in the form of Spirits.

So then, by the foregoing Table, all Bodies seem to have their refractive powers proportional to their densities, (or very nearly;) excepting so far as they partake more or less of sulphurous oily particles, and thereby have their refractive power made greater or less. Whence it seems rational to attribute the refractive power of all Bodies chiefly, if not wholly, to the sulphurous parts with which they abound. For it's probable that all Bodies abound more or less with Sulphurs. And as Light congregated by a Burning-glass acts most upon sulphurous Bodies, to turn them into fire and flame; so, since all action is mutual, Sulphurs ought to act most upon Light. For that the action between Light and Bodies is mutual, may appear from this Consideration, That the densest Bodies which refract and reflect Light most strongly grow hottest in the Summer-Sun, by the action of the refracted or reflected Light.

I have hitherto explained the power of Bodies to reflect and refract, and shewed, that thin transparent plates, fibres and particles do, according to their several thickneses and densities, reflect several sorts of rays, and thereby appear of several Colours, and by consequence that nothing more is requisite for producing all the

the Colours of natural Bodies than the several sizes and densities of their transparent particles. But whence it is that these plates, fibres and particles do, according to their several thickneses and densities, reflect several sorts of rays, I have not yet explained. To give some insight into this matter, and make way for understanding the next Part of this Book, I shall conclude this Part with a few more Propositions. Those which preceded respect the nature of Bodies, these the nature of Light: For both must be understood before the reason of their actions upon one another can be known. And because the last Proposition depended upon the velocity of Light, I will begin with a Proposition of that kind.

P R O P. XI.

Light is propagated from luminous Bodies in time, and spends about seven or eight minutes of an hour in passing from the Sun to the Earth.

This was observed first by *Romer*, and then by others, by means of the Eclipses of the Satellites of *Jupiter*. For these Eclipses, when the Earth is between the Sun and *Jupiter*, happen about seven or eight minutes sooner than they ought to do by the Tables, and when the Earth is beyond the Sun they happen about seven or eight minutes later than they ought to do; the reason being, that the Light of the Satellites has farther to go in the latter case than in the former by the Diameter of the Earth's Orbit. Some inequalities of time may arise from the excentricities of the Orbs of the Satellites; but those cannot answer in all the Satellites, and at all times to